COMMISSION DES PROGRAMMES D'ÉTUDES

BRIEF TO THE MINISTER OF EDUCATION
ON DIFFERENTIATED PROGRAMS
AND OPTIONAL PROGRAMS
IN SECONDARY CYCLE TWO

A Question of Motivation: Different Students, Different Programs

Québec

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A Question of Motivation: Different Students, Different Programs

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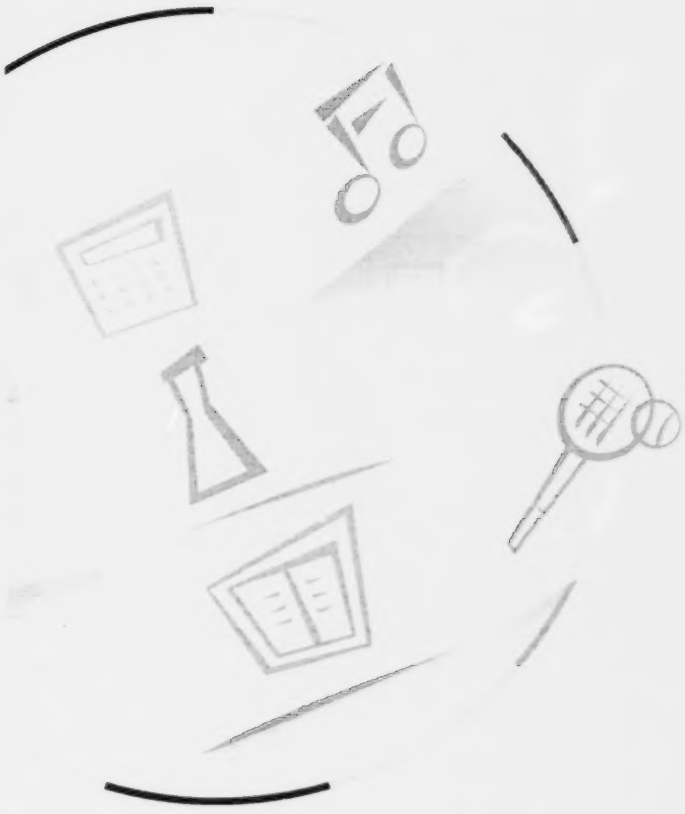
Introduction



In the wake of Québec's reform of the education system, major curriculum changes have been proposed involving the introduction of differentiated programs and optional programs in Secondary Cycle Two. These changes reflect a desire to take into account the personal interests of students, as well as their educational and professional aspirations. The Commission des programmes d'études (1998a) was aware of the scope of these changes when it produced its brief on the time frame for implementing programs, and mentioned its interest in examining the question of options in Secondary Cycle Two. It went on to clarify its views on the subject in its brief on science and technology instruction, suggesting an increase in the amount of basic science and technology instruction by adding two credits in Secondary III, while also offering an intermediate course in order to "preserve a rich range of options that would enable students to make choices based on their future aims and objectives."[1]

The Commission's mandate is to submit opinions to the Minister on issues relating to programs of study, and it has therefore taken the initiative, in this brief, of outlining its thoughts on differentiation in secondary schools.

The Commission considers differentiation to be one of the cornerstones of academic success. Its view is that a more open curriculum in Secondary Cycle Two would help stimulate interest among students who lack motivation. It also believes that differentiation constitutes a more appropriate response to the needs of students who feel their learning lacks direction. It is somewhat paradoxical that Québec's students should rank so highly in OECD international tests, especially in mathematics and science, and yet that so many should express so little interest in those very subjects. If students were made more accountable for their learning, in accordance with social constructivist epistemology, they would be able to benefit from a coordinated process of academic and career counselling that would allow them to create their own educational options.

In this brief, the Commission sets out its thoughts and questions on the major aspects of differentiation. It has tried to learn from and build on the foundations already established by the educational community. Some schools have not waited for the reform in order to introduce differentiation, as shown by the profusion of local programs, special profiles and individual projects currently available to students. The question is whether we can now draw on this wealth of experience for the benefit of all students. In preparing this brief, the Commission has taken the practices of these schools into

1. Commission des programmes d'études, *L'enseignement des sciences et de la technologie dans le cadre de la réforme du curriculum du primaire et du secondaire*, p. 19. (free translation)

account and has tried to answer the following questions: How can we give meaning to learning, other than by introducing more complex content, and how should we go about developing optional programs that will allow for both exploration and enrichment?

In preparing this brief, the Commission studied documentation relating to Québec's reform of the education system, thereby allowing it to define a framework for diversification, and review its potential. It then examined the literature to obtain more detailed information on certain aspects of the issue, including a study of the concepts of diversification and differentiation as they apply to education, the question of academic and career counselling, the factors that lead students to drop out of school and what students think of school, as well as vocational education and certification. Special attention was given to the opinion of the Conseil supérieur de l'éducation on this subject.

Based on this preparatory work, the Commission was able to formulate a number of hypotheses, which it then tested, surveying the opinions of interested parties by consulting the various educational constituencies in a three-step process. The first step involved sending out questionnaires to the members of approximately twenty professional associations under the auspices of the Conseil professionnel interdisciplinaire du Québec (CPIQ). Many respondents also submitted opinions via the Commission's Web site. A written summary of the responses served as a working paper for two focus groups, one in Québec City and the other in Montréal, both composed of questionnaire respondents. The second step involved a dozen or so telephone interviews with people from universities, CEGEPs, secondary schools and a vocational training centre. The third and last step was to have comprised visits to four schools, but in the end only one visit actually took place, due to a union boycott. However, other schools were consulted on specific issues. In all, the Commission approached more than fifty people (see attached list), and would like to express its thanks for their generous contributions. Their ideas and opinions have enabled it to clarify its thinking.

This brief is divided into four chapters. The first describes the theoretical and practical aspects of differentiation and diversification, the changes announced in the reform, and the questions it raised for the Commission. The second chapter sets out a number of principles that are useful for the preparation of competency-based differentiated programs for secondary schools. The third chapter establishes certain guidelines and gives concrete examples of differentiated as well as optional programs, while the fourth and final chapter considers the conditions required for differentiation, in terms of the changes facing secondary schools.

Chapter 1

The Issue of Differentiation

Like other educational systems in the Western world, Québec's system is now tending towards differentiation as a way of fulfilling its obligation of academic success for all students. Much of the documentation produced by the Ministère de l'Éducation (MEQ) and other educational agencies and authorities bears witness to this. There is now general agreement to the effect that every student is different, and ample evidence to show that those differences lie at the sociocultural, cognitive and psycho-affective levels. If students are treated identically by the school system even though they are different, then their differences are likely to become inequalities. Standardized instruction always favours the same groups of students and dooms other, equally important groups, to failure. The obstacles to educational success are not the same for all students, but depend on their social origins, the level of education of their parents, their own relationship with knowledge and learning, and their personal interests. These obstacles can only be overcome if every student has access to a range of resources and processes, or is given a choice of how to go about meeting standard requirements. The obligation of success, so important to every student, should always be a factor in the school's approach.

Success for all means that schools must do what they can to counter failure, which derives not only from the cultural background of the students, but also from the operating method of the school itself. Schools "fail" students on the basis of standards that are often irrelevant to the students' personal goals and needs. In this day and age, the subject of academic failure cannot be addressed without reference to the school's educational strategies, course content, standards of excellence and evaluation procedures. One explanation for academic failure that is growing in popularity is what Bourdieu, as reported by Perrenoud in *Vie pédagogique* (1995), referred to as "indifference towards difference." The challenge is therefore to achieve success for different students within the same educational institution. Meeting this challenge means admitting that there are many different ways of succeeding, and many potential and equally valuable paths to success.

In Québec, the emphasis on differentiation will come after Secondary Cycle One, even though, as we know, some aspects of educational practice involve elements of differentiation from the elementary level onwards. However, pedagogical differentiation must also include measures aimed at dealing with the problems encountered by certain students, especially those at risk of dropping out. These students require diversified educational paths and methods consistent with their aptitudes and needs, in addition to adapted teaching methods and materials.

1.1 Diversification and differentiation

The literature often uses the concepts of diversification and differentiation interchangeably to refer to a school's consideration of inter-student differences. In this brief, however, the term **diversification** refers exclusively to adjustments in the **educational structure or organization** to take into account certain characteristics of the students. Examples could include varying educational paths by reorganizing certain of their elements and the time devoted to them, or by distributing students on the basis of a particular diagnosis.

The term **differentiation** as used in this brief refers to **the organization of content, interactions and teaching activities** "in such a way that students are placed, whenever possible, in learning situations they find productive."[2] This means introducing mechanisms and educational initiatives that will improve the chances of placing students in situations conducive to essential learning, as defined in the programs of study. With regard to academic success for all, differentiation, as described in the educational policy statement entitled *Québec Schools On Course* (MEQ, 1997), means varying educational activities as much as possible, so that all students are placed in situations where they can succeed.

The Commission des programmes d'études regards diversification and differentiation as ways of offering all students the best chance of learning and achieving the required competencies by the end of secondary school. The Commission believes differentiation should be subordinate to diversification, offering students a range of opportunities to select their own educational options and draw up their own learning profiles. These paths, which students would select and build gradually, based on their own potential and fields of interest, should lead to greater success. Differentiation should therefore apply not only to programs, but also to pedagogical and didactic practices and mechanisms — in other words, to use Perrenoud's phrasing, to "the work of professionals and the structures that make it possible and establish its boundaries."[3]

It is possible to adapt education to suit a range of student types and still allow for the development of the required competencies by applying two forms of differentiation, namely *pedagogical differentiation* (teaching methods and didactical procedures) and *program differentiation* (organization of program content and the choice of contexts for learning devoted to the various competencies). The goals of pedagogical differentiation, which takes place in the classroom, are to reduce academic failure and to provide students with better tools by offering opportunities to develop a range of learning strategies. Program differentiation involves varying learning contexts, course content and program structures in order to adapt the subject matter to the characteristics of the students (potential, interests, aspirations). It can take the form of differentiated programs and optional programs within which students are able to progress individually for most of the time, and collectively for part of the time, leading ultimately to diversification of educational paths.

The reason for considering inter-student differences is not just to simplify content or adapt teaching approaches and structures to the needs of students in difficulty or those who learn at a slower pace. As pointed out by the Conseil supérieur de l'éducation, it is also a question of avoiding the risk of under-stimulating the more gifted students and losing the less gifted.[4] In other words, students of all types must be allowed to progress adequately without rushing the slower learners or holding back the faster learners, thus giving everyone the enjoyment of learning and a chance to awaken their intellectual curiosity. It is during this process that the two types of differentiation come into play, and that differentiation and diversification interact. To adapt the organization of content to student needs and aptitudes, schools must select instructional approaches that are relevant to the students' characteristics (interaction between the two types of differentiation) and reconsider the organization of time and classroom space (the impact of differentiation on diversification). Thus, although the Commission's mandate is program-focused (program component), it has had to consider the impacts of its proposals on the pedagogical component and on educational diversification.

2. Philippe Perrenoud, *Pédagogique différenciée : des intentions à l'action*, p. 9-10. (free translation)

3. Philippe Perrenoud, *ibid.*, p. 11. (free translation)

4. Conseil supérieur de l'éducation, *Les sciences de la nature et les mathématiques au deuxième cycle du secondaire, Avis au ministre de l'Éducation et ministre de l'Enseignement supérieur et de la Science*, p.12.

1.2 Diversification and differentiation as practised in Québec

Some schools in Québec have been applying diversification and differentiation for many years, and the approach has clearly grown in popularity in the last decade. Diversification and differentiation practices were surveyed in some detail by Marthe Henripin (1999),[5] who identified six categories of paths or measures in secondary schools, namely the regular path, the remedial path, the enriched path, the path of qualification for an occupation and the work force, the path of personal and career guidance and the college path. In each of these paths, the MEQ, schools and school boards make pedagogical and structural changes so that students are better equipped to succeed. For example, remedial and enriched paths are established locally, specialization options are determined by schools (artistic, scientific, etc.), and some schools devote themselves totally to a specific project (schools for returning students, schools specializing in the sciences, arts or sports, international schools, alternative schools and so on). Most locally-established projects require some form of reorganization of the subject-time allocation, either by taking back time slots normally allocated to other subjects by removing those subjects from the curriculum, or by cutting back the time spent on some subjects by a certain number of periods in each cycle. Timetables may be modified.

In most special-project schools or schools with a particular emphasis, admission depends not only on the student's motivation and interest, but also on previous academic results, superior performance, autonomy, effort and good conduct. Some schools impose aptitude tests or examinations. This is the case, for example, of some schools which specialize in music, sports, arts or science and technology. As Marthe Henripin points out, this begs the question of the extent to which special emphases and special projects are open to everyone. How many students with poor learning skills but a clear interest in the specialty area have been admitted, and have thus been able to improve their academic results? Analysis suggests that the most popular emphases and specializations have tended to favour the same groups of students, namely those who have achieved the best academic results. This practice of selecting the most successful may actually decimate ordinary groups by depriving them of the very students who have a stimulating effect on their classmates. The problem needs to be addressed, by replacing the sole criterion of performance with another which takes into account the students' focuses of interest. All students should have access to arts, science and sports.

It is logical to think that, given the range of programs available, students should be able to make their choice on the basis of their aptitudes, needs and aspirations. Yet, these special initiatives appear to be a tailor-made response by schools and school boards to the particular needs of a certain group of students, and actually exclude another significant group, namely those whose academic results are in the middle range. This particular application of differentiation is not founded on a properly defined framework, nor is it based on democratic principles that leave room, not only for merit, but also for individual potential.

1.3 Differentiation and the new educational context in Québec

The 1992 action plan on educational success entitled Joining Forces (MEQ, 1992) raised the question of whether certain curriculum elements may be too standardized, rigid and restrictive. Members of the Commission for the Estates General on Education also emphasized the need to diversify educational paths in Secondary Cycle Two by giving students an opportunity to select courses more closely related to their fields of interest and by offering earlier access to vocational education. On this point, the Commission for the Estates General on Education (1996a, 1996b) agreed that Secondary Cycle Two should be differentiated to reflect different aptitudes, choices, and goals. The Task Force on Curriculum Reform (1997), in its report entitled *Reaffirming the Mission of our Schools*, pointed out that "the main criticism levelled at the second cycle can be summed up in one sentence: schools offer little choice."[6] The Conseil supérieur de l'éducation (1999a) felt that diversifying approaches and teaching practices would be the best way to improve the chances of success for as many students as possible. The Commission des programmes d'études (1998a), in its calendar for the development and implementation of programs of study, suggested that differentiated and optional programs should be devised to allow students to select educational options in line with their needs, aspirations and interests.

These same concerns, expressed by different organizations, were taken into consideration in *Québec Schools on Course*, an educational policy statement based for the most part on the work of the Task Force on Curriculum Reform. The authors state that schools must set high standards if they are to guide students toward success. "Each school must therefore provide for the weaker, slower students and for those students who learn differently by offering learning strategies adapted to their needs and appropriate assistance and support measures."[7]

Québec Schools on Course places new emphasis on diversification and differentiation in Secondary Cycle Two. As is currently the case in mathematics and science, it proposes offering differentiated programs (i.e. programs with more than one level of difficulty) in French and English language of instruction and as a second language. Higher-level differentiated programs should comprise more credits, taken from those allotted for optional subjects. In Secondary IV, the number of credits allotted for the basic mathematics program would be reduced from six to four, in order to balance the secondary-level mathematics courses. "A middle-stream program will be introduced in

5. Marthe Henripin mentions ski-study programs and an accelerated science program that compresses all Cycle Two science and mathematics classes, including those required for college, into two years (Secondary III and Secondary V).

6. Task Force on Curriculum Reform, *Reaffirming the Mission of Our Schools*, p. 65.

7. Ministère de l'Éducation du Québec, *Québec Schools on Course: Educational Policy Statement*, p. 14.

Secondary IV and V, and the prerequisites for certain college programs may be adjusted accordingly."[8] The policy also considers the possibility of offering optional programs in the five broad subject areas (languages, mathematics, science and technology, social sciences, arts education and personal development), and in secondary-level vocational education.

1.4 The Commission's questions

According to the calendar for the development of programs of study, preparation of differentiated programs and optional programs should begin next year. With regard to the schools that currently offer optional programs and differentiated programs in mathematics and science, the Commission questions the relevance of the differentiation method proposed in *Québec Schools on Course*, which consists in making course content more difficult and increasing the number of credits. It believes, fundamentally, that the application of the same criteria to all mathematics and science students cannot produce the anticipated results. It also questions the functions and types of optional programs to be developed.

The Commission des programmes d'études therefore raises the following questions:

- How can programs of study be differentiated so that they meet the needs of students in the 21st century?
- How can students be given an opportunity to explore and test their interests and aptitudes while still obtaining a good basic education and shared cultural foundations?
- In a context where continuing education is essential, what can be done to make school seem relevant to students, so that they can be guided towards general education or vocational education?

8. Ministère de l'Éducation du Québec, *op. cit.*, p. 25.

Chapter 2

Orientations for Differentiation

Three principal orientations have emerged from the Commission's thinking on program differentiation. They provide background for the proposals set out in Chapter 3.

2.1 Strengthening differentiation in competency-based programs

The new competency-based programs of study are already in use in elementary schools, and are in preparation for Secondary Cycle One. The organization, in terms of competency development, of the content of the Québec Education Program opens the door to pedagogical practices such as project work, and encourages teachers to shift from the transmission paradigm to the constructivist paradigm.

This paradigm shift is not obvious in the Approved Version of the *Québec Education Program, Preschool Education, Elementary Education* (2001), which refers to two epistemological paradigms, one behaviourist and the other constructivist, thus exhibiting an internal contradiction likely to generate inconsistencies in practice. According to P. Jonnaert (2001),

> the MEQ, in using these two contradictory paradigms, did not do the selection work that would have given it better control over its own conception of learning. A paradigm that will be used as a point of reference by teachers in their teaching practice cannot afford to be ambiguous. Its function is to establish an unambivalent frame of reference within which teachers can analyze and construct teaching and learning initiatives.[9]

While it is possible to draw from more than one theory when preparing or applying a program, the theories in question must not contradict one another. Yet, behaviourism and constructivism, as referred to in the Québec Education Program, are contradictory in that they do not perceive knowledge and the learning process in the same way.

9. Philippe Jonnaert, *Compétences et socioconstructivisme : de nouvelles références pour les programmes d'études au Québec*, in the opening speech at the conference of the Commission professionnelle des services éducatifs of the Association des cadres scolaires du Québec, entitled *Développer des compétences: oui. ..., mais à quelles conditions?*, p. 4, December 12-13-14, 2001, Hilton Hotel, Québec City (free translation)

In the constructivist paradigm, knowledge, in the sense of understanding, is built by the subject on the foundation of his or her own experience, and is therefore not independent of the subject. In the behaviourist model, however, such understanding can be located and verified outside the subject, and is communicable to him or her.

The Commission believes the MEQ should give a clear signal in this respect, so that teachers use the same frame of reference as a basis for their pedagogical practices. While it is not our wish to criticize what has been done so far, we do feel it is important to lay down clear and explicit foundations for the secondary-level reform, so that teaching teams understand the issues of the new curriculum.

Having said this, the question remains as to whether competency-based programs are sufficient in themselves to provide differentiation in the second cycle both for academic and vocational education. Clearly, the new program model adopted by Québec changes the roles of students and teachers alike. Students will no longer be passive recipients of knowledge, but will be required to integrate new knowledge with their prior understanding. Their learning will gain meaning as a result, since competencies can only be developed if learning is situated in a context and placed in perspective. The task of the students will be to make explicit the connections between the past and present and the projects to which they are related.

These features of the Québec Education Program are conducive to differentiation, because students are placed in different contexts. There is implicit recognition of the fact that different students can take different paths to develop the required competencies. However, although secondary school programs are competency-based and conducive to meaningful learning, in that they involve cross-curricular competencies and broad areas of learning, the Commission believes this is insufficient to generate differentiation in the classroom. Although the programs are pedagogically differentiated to some extent, the Commission feels the MEQ should go one step further by introducing differentiated programs in particular subjects, though not exactly as proposed in Québec Schools on Course.

2.2 Being innovative: introducing a new form of differentiation

The solution that appears to have been retained in the educational policy statement is to increase program content and teaching time. However, it is far from certain that this is the best way of motivating students and ensuring success for all. Indeed, the members of the Commission for the Estates General on Education were by no means convinced that an increase in the time allotted for compulsory subjects would improve student results. "It might be pointless to add teaching time if this time was to be used in the same way or, worse still, if we continued to appropriate more and more of this time for evaluation purposes."[10] Yet, this is the solution that has been retained, since teaching time for French, language of instruction and French as a second language in the first cycle and mathematics in Secondary III has been increased. It is as though doing "more" is perceived as the only way of doing "better."

At the same time, programs that are differentiated by increasing the number of credits deprive students of those credits in their optional courses, thus preventing them from exploring and delving more deeply into certain subjects or from exploring vocational education. This practice of allocating more credits to so-called "enriched" programs thus has its drawbacks, which we feel are important to mention here.

First, there is an impact on the students themselves, in that students are accepted for enriched programs on the basis of past performance. College prerequisites pressure students to take enriched programs even if those programs fall outside their fields of interest, and this deprives them of the experience of exploration. Second, there is also an impact on teachers. Many teachers want to teach the more gifted students, those who opt for "enriched" programs, and teachers who are given the less gifted groups can feel excluded and thereby lose their motivation. Lastly, there is an impact on schools, which must compete to recruit the students with the best results, to such an extent that schools with no desire to adopt a special focus are now wondering whether they can survive without one.

In the Commission's view, differentiation achieved by increasing content in all programs is not particularly original. It believes differentiation needs to be approached from another standpoint, one that takes into account other variables such as student interest, different forms of intelligence, and the student's need for guidance and exploration. As Gardner (1996) has shown, intelligence can take many forms. Public schools are open to everyone. They must therefore deal with different types of students and try to maintain them at school until they have completed their compulsory education. Some students shine in certain subjects and do not perform as well in others, while other students perform well in all subjects. And while some students choose their careers very early in life, the majority only develop specific interests much later: "...at the end of secondary school, when they are pressured by deadlines for applying to CEGEP, they too often make a hasty decision, without being mature enough to measure the consequences of their choice."[11]

10. Commission for the Estates General on Education, *The State of Education in Québec*, p. 47.

11. Commission for the Estates General on Education, *The State of Education in Québec*, op. cit., p. 28.

2.3 Considering the interests of all students through exploration and enrichment

Secondary school students are, in all respects, at the discovery stage of their lives, namely socially, intellectually, sexually and spiritually. It is at this age that choices must be made – the choice of electives, the choice between vocational education and CEGEP, the choice of staying in school or getting a job. None of these choices is definitive, but together they raise the question of academic and career counselling, at both the secondary and college levels. In a recent brief on this subject, the Conseil supérieur de l'éducation (2002) suggested that vocational indecision should be regarded as a common trait in the development of college-level students, and that it should be one of the focuses of development offered them to help them make the right choices.

It has to be said that the *Career Choice Education* program has not lived up to expectations, to such an extent that many young people, at the Estates General, asked that it be reoriented or replaced by practicums or by student service. The concept of the "guidance-oriented school"[12] was introduced partly to replace the Career Choice Education program. It is based on cooperation between the various categories of school personnel, the governing board, the community and the school board, and involves offering students a set of resources to guide both their quest for personal identity and their educational and vocational development, so that they are able to become well integrated members of society and, in particular, productive members of the work force.

Over and above the broad area of learning "Personal and Career Planning" which includes the guidance-oriented school, it is the actual structure of the secondary level curriculum that should be conducive to guidance, through exploration or further study of subjects. Generally speaking, students are curious and anxious to learn when they first start secondary school, but they often lose their enthusiasm over the years because what they learn has no meaning for them. Adolescence is certainly a factor in this, but schools nevertheless have an important role to play in making sure student involvement is maintained throughout secondary school. In this respect, they need to think carefully about what they are doing.

The Commission des programmes d'études believes that diversification of the secondary school curriculum, a byproduct of the division into cycles, affects not only the potential for exploration in the choices students will have to make, but also the programs of study themselves. Some form of diversification following after a basic common-core education is needed to allow the exploration or in-depth study of certain subjects, and is possible when the programs offered allow the students to develop their potential by fuelling their aptitudes and meeting their needs. This means rejecting the "guidance by default" method in favour of the positive choice method. As the Conseil supérieur de l'éducation pointed out, "We have tended to keep the majority in a kind of homogeneous mainstream over the years, and then eliminate them by failing them in their postsecondary studies or by imposing rigid quotas."[13]

* * *

In short, the Commission's reflections have led it to propose certain guidelines for the preparation of differentiated programs in secondary schools. First, competency-based programs, although conducive to educational differentiation, are insufficient on their own to generate the type of differentiation students need at this stage in their education. Second, programs that are differentiated by increasing teaching time or content do not necessarily meet the needs of students, or spark their interest. Third, programs should not discriminate on the basis of past performance. And lastly, differentiated programs must allow students to explore the subject matter or study it in greater depth, so that they are in a position to make choices. Together, these guidelines open up a new and interesting avenue for differentiation in secondary schools.

12. This concept was proposed by the Ordre professionnel des conseillers et conseillères d'orientation du Québec in 1993 and taken up in the report entitled *Reaffirming the Mission of Our Schools*.

13. Conseil supérieur de l'éducation, *Rénover le curriculum du primaire et du secondaire*, Brief submitted to the Minister of Education, p.77. (free translation)

Chapter 3

Guidelines for Implementing Differentiation

In this chapter, the Commission sets out practical applications of its orientations for differentiation and presents the results of its reflections on differentiated and optional programs. For each case, possible guidelines for developing programs are given, followed by suggested examples. The chapter ends with a discussion of the recognition, through certification, of the competencies students have acquired and the effect of this recognition on alignment with college-level studies.

3.1 Differentiated programs: considering inter-student differences

The Commission's proposals are based on its pedagogical beliefs, presented here in the form of guidelines. Using these guidelines as a basis, the Commission has established methods to differentiate programs, according to the pedagogical requirements of the subjects in question (languages, mathematics, science and technology). It does not claim to have exhausted all potential approaches to differentiation. On the contrary, in presenting these proposals, its goal is to stimulate further innovative thinking on how students might choose educational paths better suited to their aptitudes and needs. The hope is that they will be more motivated and more willing to contribute to their own success, and hence less likely to fail or drop out.

Guidelines for differentiated programs

The guidelines established by the Commission des programmes d'études for the preparation of differentiated programs are:

- When introducing program differentiation, it is important to comply with the number of credits set out in the Basic school regulation, so as not to cut down on the time available for optional courses. Differentiation should therefore not be based on a vertical vision — in other words, an increase in the number of credits and hence in teaching time. Instead, it should be based on a horizontal vision, as suggested by the Conseil supérieur de l'éducation: "In a given compulsory subject, it should be possible to create more meaningful courses, in terms of career-choice exploration, than those in the basic common core, without necessarily increasing the number of credits, as suggested in *Québec Schools on Course*."[14]

14. Conseil supérieur de l'éducation, *Les enjeux majeurs des programmes d'études et des régimes pédagogiques*, Brief submitted to the Minister of Education, p.36. (free translation)

- Differentiated programs would fit into the profiles constructed by students from the choices available. Students would create their own profiles according to their personal abilities, interests and academic and career goals. Thus, they would become active players in their own education, in line with constructivist epistemology. Differentiated programs would therefore be part of an open system as opposed to a closed profile.

- Differentiated programs should be designed in such a way that students have access to every possible avenue when pursuing their education, rather than as prerequisites for a given profile. In other words, if a student opts to take a differentiated program, regardless of the reason, there should be no prerequisites and no doors should ever be closed as a result of that choice. This means that differentiated programs in the same subject must all be of equal level.

- Standardization should not be a criterion when preparing differentiated programs. In other words, the Commission's answer to the question of how programs should be differentiated so as to motivate students and stimulate their interest is that there can be no single solution applicable to all subjects. For each subject identified in *Québec Schools on Course* as showing potential for differentiation, there are specific difficulties for student learning. Factors to be considered include the particular structure of each subject, its inherent learning context, and the attitudes of the students.

- To be realistic, the Commission suggests that the number of differentiated programs per subject be limited to three. This number allows for a reasonable choice of programs for all schools in Québec. In certain cases, special arrangements could be made to facilitate their implementation.

Differentiation proposals for the target subjects

In examining the teaching and learning issues specific to the subjects with differentiation potential, the Commission was able to establish two methods of differentiation, namely differentiation by the context for learning for each program and differentiation by enrichment.

Differentiation by varying the context for learning[15]

The Commission believes that pedagogical differentiation needs to be reinforced by differentiated programs at this stage in the education process. For the languages of instruction, for mathematics and for science and technology, it therefore proposes **a model of differentiation that varies the context for learning in an attempt to reach students through their personal interests and needs**. The focus here is to identify interesting contexts that will motivate students to learn.

Differentiated programs of this type could be introduced gradually into the second cycle, providing a real choice for students and avoiding a situation where schools are forced to offer selection too early, in Secondary II.

The Commission believes Secondary III is a key year for differentiation. It may therefore be appropriate to offer a single program for the languages of instruction, for mathematics and for science and technology, with each program presenting the three learning contexts used in the differentiated programs in the last two years of the cycle. This would provide students with a firmer foundation for their subsequent choices. The Commission invites the MEQ to consider this proposal.

In Secondary IV and Secondary V, students would be offered not more than three differentiated programs for each subject, and would be required to select one. The programs would:

- address the same competencies, because the students would still be at the compulsory stage of their education and be required to achieve a specific threshold of competencies by the end of their secondary studies.

- include the same *essential knowledge*[16] to ensure that students fully understand the concepts, and to facilitate inter-program transfers during the cycle. Programs should be based on the preceding cycle, and should enable all students, regardless of their choice of differentiated programs, to continue their education.

- offer students a range of contexts for learning that reflect their interests, needs and potential, and allow them to build learning profiles geared to further study or exploration.

- involve a certain level of complexity but still be realistic, taking into account individual student development levels. It is essential that the challenge offered to students be a reasonable one.

15. The term "context for learning" has the same meaning here as in the *Québec Education Program, Approved Version, Preschool Education and Elementary Education: the context for learning "describes the conditions in which students should be placed to develop and exercise the competency*, usually describes resources students may use and constraints imposed by the situation," p.9.

16. The term "essential knowledge" has the same meaning here as in the *Québec Education Program, Approved Version, Preschool Education and Elementary Education*, i.e. "the repertoire of resources indispensable for the development and exercise of the competency," p.9

Thus, in every differentiated program, competencies and the same essential knowledge would be treated according to a specific context for learning. It would be as though enrichment by content complexity, as proposed in *Québec Schools on Course*, had been implemented by varying the context for learning to reflect student interests and aptitudes, thus producing programs of comparable level and of equal importance. This type of differentiation would enable basic education to continue in Secondary Cycle Two through the core competencies, but would pave the way to diversification of paths through variations in contexts for learning.

Examples by subject

It is difficult to provide detailed examples, because the Commission has no information on the programs proposed for Secondary Cycle One. (When the French version of this brief was published, the Commission des programmes d'études had not yet received information on the programs for Secondary Cycle One.) Its suggestions should therefore be considered with this limitation in mind. In its examples, the Commission has not focused on *essential knowledge*. However, it is important to remember that an increase in content could be detrimental to competency development. According to Perrenoud (1999), "the issue is clearly to avoid overloading programs at a time when students need time to mobilize their knowledge to build their competencies."[17]

In French and English, language of instruction

Currently, there is only one compulsory program in French and English Language Arts, at the secondary level. Under the proposals for differentiation in *Québec Schools on Course*, the new differentiated programs would allow students to continue their education and aim either for vocational education after Secondary IV or Secondary V, or for CEGEP.

With regard to the language of instruction, certain factors are worth mentioning here. Students say they have the impression of always doing the same thing in language of instruction courses, and yet, research has demonstrated weaknesses in their understanding of linguistic codes and the function of language. Moreover, the results of the School Achievement Indicators Program (SAIP) run by the Council of Ministers of Education, Canada (CMEC) show that, in the 13-year-old age group, as well as in the 16-year-old age group, boys rank behind girls in both reading and writing (Conseil supérieur de l'éducation, 1999b). The Conseil appears to ascribe a large part of the difference in the repeat rates of boys and girls to the fact that boys have more problems with reading and writing, since there are no significant differences in their results for other subjects. We believe the time has come to find a way to stimulate the interest of boys, so that they will be more motivated to learn the language of instruction. Clearly, there are many other factors that contribute to the poorer performance of boys, but in this brief, the Commission has concentrated on those related to the programs of study. Girls, too, would benefit from a variety of contexts for language learning.

Differentiation based on the context for learning in certain compulsory programs could actually increase the commitment of the students through more motivating, guidance-oriented learning. For example, environments involving science and technology, citizenship or the arts could stimulate the interest of students, thus encouraging them to learn the language of instruction.

EXAMPLES OF CONTEXT-BASED DIFFERENTIATION IN THE LANGUAGE OF INSTRUCTION

Language of instruction in the context of science and technology: In this type of program, students would develop the required competencies in their language of instruction by using non-technical scientific texts. Science is a subject of particular interest to boys, but would also attract the attention of girls. Emphasis would be on science, creativity and imagination. Examples could include scientific articles and literary works with a scientific or technological orientation.

Language of instruction in the context of citizenship: In this type of program, students would develop the required competencies in their language of instruction in an environment focused on speeches, debates, and participation in school, community and social life. They would use texts dealing with society and politics, a field in which there is abundant literature.

Language of instruction in the context of the arts: In this type of program, students would develop the required competencies in their language of instruction by focusing on the arts, including literature from cinema and the theatre as well as the media. They would enrich their reading and writing abilities by learning to appreciate and criticize artistic works and use their creativity, drawing on artistic culture of the past and present, from here and elsewhere.

17. Philippe Perrenoud, "Raison de savoir," *Vie pédagogique*, no. 113, p. 8. (free translation)

Without being too specific, the Commission believes the *essential knowledge* common to all three programs could include literature, new information and communications technologies (ICT) use, and some elements relevant to the development of required competencies in the languages of instruction. For reading, these would be detailed and general textual comprehension, and textual comparison. For writing, students should be given more choice, beyond the standard textual production requirements. Student accountability for textual comprehension and production is vitally important. At the same time, the common *essential knowledge* should focus on cultural enrichment, in line with the objectives of the reform.

Such programs would help students to understand the linguistic code, and would also teach them how to structure their thinking, express themselves correctly and develop their skills in analysis and synthesis. Textual analysis would give meaning to their learning, providing them with a multitude of opportunities to exercise their critical thinking, while hopefully finding the subject more enjoyable.

In mathematics

Secondary level mathematics courses enable students in Québec to achieve very high standards, as illustrated by the pan-Canadian TEIMS-99 survey (Gouvernement du Québec, 2001) and the international PISA survey (OECD, 2000). The paradox is that Québec students, although successful, do not like mathematics. This is the case for 47% of those who achieved excellent results in the competency examination. In all, 38% found the subject boring, and 46% did not plan to work in a job that required mathematics.[18]

The performance of students in Québec is almost certainly due to the problem-solving approach that forms an integral part of all the province's mathematics activities. However, it also seems to be due, to a large extent, to the pressure on students to stay in school. The question is how to maintain or even improve current student performance, while encouraging students to continue studying the subject.

The proposal made in Québec Schools on Course seems to be based solely on student potential, and the cognitive aspect of learning seems to take precedence. For example, in Secondary IV, Mathematics 416, 426 and 436 are described as basic, intermediary and advanced programs, respectively. This classification is discouraging to the students in the basic program, and is hardly a motivating factor, especially if we consider that performance is often confused with motivation. While it is true that not everyone has the same ability to learn mathematics, it is equally clear that students do not study mathematics for the same reasons or with the same level of interest. Instead of motivating students, differentiation by content difficulty actually discriminates against certain groups in a negative way.

In view of this situation, action seems to be required at the emotional as well as the cognitive level, by offering contexts for learning mathematics that are of greater interest to students—not by diluting the content, but by making students proud of their mathematics achievements, even where they differ from those of their classmates with an interest in other subjects. For example, art students who learn how to produce perspective drawings using vanishing lines would not feel inferior to their more scientifically-minded classmates working towards a college-level science program.[19]

EXAMPLES OF CONTEXT-BASED DIFFERENTIATION IN MATHEMATICS

Mathematics in the context of science and technology: In programs of this type, students would develop the required mathematics competencies by focusing on the sciences and technology, which are of tremendous interest to some groups. Trigonometry could be learned through optics, for example, while forces and vectors could be learned through robotics.

Mathematics in the context of the arts, literature and communication: In programs of this type, students would develop the required mathematics competencies within a context associated with the arts, literature and communication. For example, architecture could provide the backdrop for the development of descriptive geometry competencies, and encoding could be used as a context to learn formal language.

Mathematics in the context of the social world: In programs of this type, students would develop the required mathematics competencies within a context associated with the social world. For example, demographics and meteorology could serve as the context for the development of program competencies and the mastery of probability, optimization and so on.

18. See the TEIMS-99 Report for Québec.

19. This proposal is similar to the measures suggested by Dacunha-Castelle (1989) for French schools.

This closer relationship between context and subject or subject area should not mean a dual focus in the program – for example, on both mathematics and science, on both mathematics and arts, on both mathematics and the social sciences. On the contrary, it would still be a mathematics program targeting the development of mathematical competencies, the difference being that it would place the students in conditions relevant to their personal interests and would allow them to use specific approaches to learning.

The *essential knowledge* common to the programs could include the following:

- Basic skills, techniques and procedures, along with essential approaches to mathematics
- Fundamental and basic concepts such as relations and functions, sequences and series, analytical geometry and algebraic language, communication and functional notation
- Cultural reference points such as historical texts and simple nontechnical texts illustrating different uses of mathematics.

With such programs, all students could study mathematics as part of their general education, in a stimulating context, and would understand what mathematics can contribute to their lives, including its power as a tool, its role in developing reflective competencies, disciplined thinking and aesthetic appreciation. Obviously, this requires an acceptance of the primacy of method over content, along with a more qualitative vision of mathematics as, also, an approximate science.

In science and technology

The issues of teaching science and technology in secondary schools are very similar to those of teaching mathematics. In the TEIMS-99 survey, Québec students enjoyed science and technology the least, despite their good performance. They were also the least likely of all Canadian students to want to work in the scientific field. Once they had obtained their high school diplomas, they were less likely to choose a scientific career. Science has the reputation – quite rightly – of being difficult and demanding in terms of the duration and intensity of effort required. Students may also have the false impression that following a science program would distance them from contemporary issues, according to Ourisson (2002). Girls in particular tend to avoid applied science programs in college and at university, as shown by the Education Statistics (MEQ, 2001).

In its brief on the teaching of science and technology, the Commission des programmes d'études felt that the strong science concentration offered to all students in Secondary Cycle Two, on the assumption that they should all be eligible for postsecondary programs in science and technology, was neither realistic nor desirable. However, to enable students to continue their education in science and technology at different stages of their educational path, the Commission suggested the introduction of intermediate courses. It also encouraged the building of bridges between courses with different levels of difficulty, so that students who changed their orientation could acquire college prerequisites without being penalized.

Following clarification of the secondary school reform (targeting of the same competencies as elementary school, with a joint science and technology program up to Secondary IV) and its reflections on differentiation at the secondary level, the Commission has concluded that differentiated programs, such as those proposed for the language of instruction and mathematics, would be desirable. In fact, if we want to improve student performances in science and technology, and increase their desire to continue studying the subject at the postsecondary level, they must have access to programs tailored to both their potential and their interests. In science and technology, as in mathematics, more work needs to be done to relate the subject to the students' affective needs.

The need for countries to have a large percentage of students in the sciences requires no further proof. Mastery of science and technology is a vital factor in social, economic and cultural development, and is an obvious advantage in the current context of globalization, with its emphasis on cooperation and competition. We therefore need to encourage students to undertake postsecondary studies in science by adjusting the science and technology programs to make them more attractive. As the OECD has pointed out, motivation and commitment are the motors of learning.[20] Even for students who do not intend to specialize in science or technology, programs need to be adapted to reflect life in a technology-based civilization, so that students are able to understand the world in which they live and become involved in ethical and scientific debates.

Students reaching Secondary Cycle Two will have taken combined science and technology courses since elementary school, and will have had the opportunity to examine these subjects in connection with their social, economic and cultural environment. They will have developed an interest in one of the broad themes of science and technology — for example, the material world, living things, or Earth and space. It is clear from the Education Statistics (MEQ, 2001) that, based on college choices, girls are more interested in living things, while boys opt for the material world. Differentiated programs focusing on these elements could help trigger student interest in a scientific and technological education.

20. OECD, *Knowledge and Skills for Life*, p. 108.

EXAMPLES OF CONTEXT-RELATED DIFFERENTIATION IN SCIENCE AND TECHNOLOGY

Science and technology in the context of the material world: In programs of this type, students would develop the *required science and* technology competencies in a context associated with the material world. Essential common concepts, such as that of light, would be addressed by reference to applications in the material world.

Science and technology in the context of living things: In programs of this type, students would develop the required science and technology competencies in a context associated with living things. For example, the concept of light would be examined in terms of its impact on living things.

Science and technology in the context of Earth and space: In programs of this type, students would develop the required science and technology competencies in a context associated with the Earth and space. Essential concepts would therefore be linked to the broader context of the universe, and our earlier example of the concept of light would be addressed in a quite different way, with nothing being omitted.

Differentiated programs of this type should not be perceived as programs in chemistry, physics, biology, astronomy or astrophysics. On the contrary, the goal is to draw students towards those subjects, by allowing them to learn within a context based on the material world, living things or Earth and space, depending on their specific fields of interest.

The essential knowledge that is common to the differentiated programs should be a continuation of that conveyed in Secondary Cycle One. It would include concepts, laws and theories, together with the basic scientific and technological tools, objects, techniques and procedures in the three fields. These would be virtually the same in all the programs, but would be treated differently, allowing all students to maintain their interest in science and technology as a field of study. In this respect, it would perhaps be useful to add a component on science in industry, to place the subject in context and to encourage students to study it at the postsecondary level.

In the programs, students would acquire competencies that would enable them to understand scientific and technological phenomena, and to participate as citizens in the social, economic and political life of their community. This would be achieved by helping students to discover the connections between science and technology, their development within society, their use in everyday life, and their positive and negative impacts on individuals, the economy and the environment.

Differentiation by program enrichment[21]

The problem of teaching students their second language is different from that of teaching the language of instruction and other subjects. Students come to secondary school with widely varying levels of competence, depending on the extent to which their family and social environment exposes them to the second language. Some students in Secondary Cycle One may have a second language competency level equal to Secondary IV requirements. Why, then, should they have to wait until Secondary IV in order to have access to differentiated programs in the second language, as recommended in *Québec Schools on Course*? Why should they not start in Secondary I if the need is there? Why not encourage students who learn faster or who are already bilingual by giving them an opportunity to continue to learn their second language at their own pace and at their own level?

New students in Secondary Cycle Two have widely varying levels of second language skills, and it is extremely important to take this into account, so that all students can be adequately encouraged to learn. The Commission therefore envisages a particular type of differentiation for second language programs, namely differentiation by enrichment. This involves offering a basic program with learning situations that are more stimulating for students, a second program with a higher level of content difficulty, and a language of instruction program (French for English-speaking students, and English for French-speaking students). Students who have already mastered both French and English would be allowed to learn a third language.

21. Enrichment is regarded both vertically (enhancing the conceptual level by emphasizing the learning process) and horizontally (broadening the application of knowledge) (Legendre, 1993).

Examples by subject

English as a second language

Under section 27 of the Basic school regulation, students who can show that they have achieved the objectives of a program by passing an examination imposed by the school or school board do not need to take that program. However, the time allocated for the program must be used for learning purposes. The MEQ does not have statistics on the number of students who take advantage of this provision, but some schools do allow students with good English second language skills to take the Secondary V examination in Secondary III, and if they are successful, to join the English Language Arts program. This, in itself, is a form of differentiation. Nevertheless, it is important to note that the students are not exempted from second language courses, since the second language is a compulsory subject. The Commission wonders if third language programs should be available as options only. Would it be possible to replace the second language by a third language if the student demonstrates a certain level of mastery? Clearly, there is always room for improvement in language learning, especially with regard to written skills, but it seems to us that further thinking on this subject would not be amiss. Allowing students who are already bilingual to learn a third language would perhaps be a legitimate way of acknowledging their skills, and a source of additional motivation.

A number of school boards have formed cooperatives to prepare an English as a Second Language program for their best students, usually following an intensive English program. The program is known as ESL-LA,[22] and includes elements of English as a second language, along with elements of the language of instruction. This is one example of how the school community can meet the needs of bilingual or outstanding students, to compensate for the absence of a ministerial program suited to their skill levels.

It is also likely, in the future, that large numbers of French-speaking students will have taken intensive ESL programs at the end of elementary school, and will therefore have good English language skills. Intensity appears to be more effective than exposure in small doses, according to Zacharias (1999). When these students start secondary school, they may need a program offering challenges tailored to their second language learning needs. In the Commission's view, a range of programs would be better suited to the range of needs and different levels of ESL mastery exhibited by students.

EXAMPLES OF DIFFERENTIATION BY ENRICHMENT IN ENGLISH AS A SECOND LANGUAGE

A basic program for students with minimum ESL skill levels at the beginning of Secondary Cycle Two. To make the program more stimulating, the emphasis could be on past and present literature in English from here and elsewhere.

An enriched program that goes further than the basic program. It would be aimed at students who are not yet bilingual, but who perform well in Secondary Cycle Two, and could be based on the social sciences, the media or sports, for example. It, too, would focus on past and present literature in English from here and elsewhere.

An English Language Arts program for bilingual students, if they are required to continue with English courses.

This type of differentiation is consistent with the MEQ's regular enrichment model. The focus on literature, social sciences, sports and the media would help increase the cultural content, as required by the reform.

French as a second language

The reform has allowed for the introduction of two programs in French as a second language, namely the basic program and the enriched program. Differentiation therefore already exists in this subject field. In addition, some schools offer their bilingual students an opportunity to take the French, language of instruction program, in the same way that the French-speaking sector offers the English Language Arts program. The Commission encourages both sectors to continue this practice.

In the English-speaking sector, most students currently have access to French immersion at the elementary level. At the secondary level, most are able to take intensive, post-immersion or late immersion French courses.

22. English as a Second Language – Language Arts.

According to the Advisory Board on English Education (1995), 94% of students received more than the one hundred hours of French instruction stipulated in the 1995 Basic school regulations. In the vast majority of cases, students opted to take courses in certain subjects in French. However, the Board also found that secondary school students appeared to choose their courses on the basis of marks and credits, rather than a desire to improve their knowledge of French. Post-immersion students often dropped out because, when they chose to study a subject in French, they had to take a program designed for students whose mother tongue was French. It was therefore more difficult for them to obtain good marks. There has apparently been no research on the relative value of subjects taught in the second language, in terms of their contribution to the learning of language.

The principal deficiencies exhibited by students are in reading and writing, since the programs tend to emphasize oral skills at the expense of reading and writing ability. To overcome these deficiencies, the Commission proposes a range of programs in French as a second language similar to those proposed in English.

EXAMPLES OF DIFFERENTIATION BY ENRICHMENT IN FRENCH AS A SECOND LANGUAGE

A basic program for students who have a minimum level of competency in French as a second language at the beginning of Secondary Cycle Two. To make the program more stimulating, emphasis could be placed on the reading and writing of texts drawn from past and present French literature from Québec and the world.

An enriched program that goes further than the basic program. It would be aimed at students who are not yet bilingual, but who perform well in Secondary Cycle Two, and could be based on the social sciences, the media or sports, for example. It, too, would focus on past and present French literature from Québec and the world.

A French language of instruction program for bilingual students, if they are required to continue with French courses.

Such programs would help English-speaking students to develop their reading and writing skills, and would also help them to develop their competency in other subjects if they took them in French. Media texts in French could support the competency development process, establishing a parallel with the media competency in the English Language Arts program. The Commission also believes it should be up to the schools to decide whether students can take other subjects in French as a second language.

* * *

In short, the differentiated programs proposed by the Commission des programmes d'études reflect student potential, interests and aspirations, and constitute an invitation to schools to implement practices aimed at stimulating and enhancing the self-worth of students. The Commission believes such programs should be offered within an interdisciplinary framework, allowing students to select profiles that will broaden their horizons rather than close doors. Program differentiation, as proposed here, leaves plenty of room for pedagogical differentiation, which is the responsibility of the teacher in the classroom, and should lead to a diversification of paths. Students who select a given differentiated program will not necessarily form a homogeneous group, and it is up to teachers to take individual student needs into account. Students in difficulty will always require more support from the teacher, even when placed in a stimulating environment.

The proposed differentiated programs in language of instruction, mathematics and science and technology will help students acquire the same competencies through the use of common essential knowledge in different learning contexts directed towards the students' personal interests.

In second language programs, the Commission has opted more or less for the type of differentiation currently practised by schools. This involves providing students with support appropriate to their level, while maintaining a certain challenge. For example, depending on their second language skill level, some students would take a basic program while others would be entitled to enriched programs offering additional learning. Those with very advanced skills could take the French or English language of instruction program as their second-language course.

3.2 Optional programs: a better reflection of student interests

In this section, the Commission presents its thoughts on optional programs, although it is aware that there is room for further thought and creativity. As in the section on differentiated programs, it sets out some suggested guidelines for program preparation, and provides examples of optional programs in a variety of subject areas. It also discusses personal learning projects within the subject-time allocation, and addresses the possibility of including career exploration as one of the optional subjects.

When the Commission uses the term "optional programs," it is referring to programs drawn up by the MEQ, not to local programs.[23] Nevertheless, the Commission does have some questions concerning local programs. Will schools review their local programs to bring them into line with the MEQ competency-based model? It is our view that they cannot do otherwise, and it would seem appropriate that the MEQ offer support for this process, through the school boards.

Guidelines for optional programs

In future, optional programs will be offered in five subject areas (languages; mathematics, science and technology; arts education; social sciences; personal development), and in vocational education. The number of optional credits is increased from 16 to 26 in Secondary IV and Secondary V, and remains unchanged (four credits) in Secondary III. The increase in the number of options clearly illustrates the MEQ's desire to diversify education in Secondary Cycle Two. Options enrich the common-core basic education and diversify educational paths through the choices made by students to suit their own aptitudes and needs, and their educational and vocational aspirations. The Commission regards options as being extremely important for student orientation. In this section, it proposes a number of rules and guidelines for the design of optional programs.

- *Québec Schools on Course* proposes that students select their optional subjects every year in no more than two subject areas. The Commission feels this proposal is too restrictive, and proposes instead that choices be spread over three years, in at least three subject areas, a configuration that would be much less restrictive. Cycle Two is an excellent time for exploration, a last chance for students to exercise choices before they go to college.

  The number of optional subject areas per year should be consistent with the role of optional courses in secondary education, namely to help students position themselves for their future education and careers by giving them an opportunity to match their interests and aspirations with their talents and potential. One of the goals of the reform, preparing students to become citizens, requires a more open approach in more fields of study, so that students receive a basic education that is as complete as possible.

- In the secondary level of the Québec Education Program, optional programs should play the dual roles of further study and of exploration. In terms of further study, they should allow students to strengthen their competencies in the various subjects, and in terms of exploration, they should provide an opportunity for students to test their interest in a group of subject areas and for a range of occupations, so that it will be easier for them to make choices. Given their dual role, optional programs can include activities reflecting the situations students will encounter both in postsecondary education and in the labour market.

- Some optional programs should take an interdisciplinary approach, for example by linking different subjects, thus giving students an opportunity to develop both subject-specific and cross-curricular competencies. Students could then choose a personal learning project touching several subjects.

- Optional programs should provide students with a foundation that will enable them to adapt to the changes of the 21st century. The new social, cultural and economic environment in which they live will change constantly, and will be more demanding than ever before.

Examples of optional programs

Given that more credits have been allocated to optional subjects in Secondary Cycle Two, the MEQ will almost certainly have to offer more optional programs. The Commission has thought about this, and suggests some optional programs that it feels will motivate students, partly because of their novel aspect and their exploratory dimension, partly because they meet the needs of stronger students wishing to deepen their understanding, and partly because of their interest to students in general. Optional programs might also benefit students by touching upon several subjects, while nevertheless focusing primarily on only one.

23. Under the *Basic school regulations for preschool education, elementary education and secondary education* (section 25), schools can prepare local programs and allocate up to four credits without the Minister's authorization. There are a great many local programs over which the MEQ has no control.

Languages

In the language of instruction, the Commission looks favourably upon new optional programs in **creative writing**, including poetry, prose, drama and scriptwriting. A program in **current affairs journalism** would be of interest to many students, and would help increase their awareness of their community and of the world. An option in **reading and the history of literature** would allow them to discover the different styles of the centuries, and to understand literary works as reflections of their time.

In third languages, the Commission, in one of its briefs, has already proposed a **Spanish** program starting in Secondary III. The choice of Spanish was based on "the importance of mastering a third language in order to encourage interpersonal communication and on the growth in cultural and economic relations between Québec and South and Central America."[24] It maintains its position in favour of this language. However, it also believes other introductory-level ministerial programs could be offered in other languages, so that students can develop an open attitude and learn to adapt to the new conditions of the 21st century, characterized by extensive social, economic and cultural change.

The study of language must go beyond oral practice, and these new programs should also introduce students to the culture, history and geography of the countries or regions that use the language in question, as requested by the Task Force on Curriculum Reform. This would be an excellent opportunity for enrichment and interdisciplinarity.

Mathematics, Science and Technology

Multidisciplinary options could also be offered in mathematics. An example would be **mathematics and demography**, which would address current population and development problems through mathematics. For students taking differentiated programs in "mathematics in the context of the arts, literature and communication" and "mathematics in the context of the social world," this could be an opportunity to practise their subject-specific competencies in a new context, thus offering an interesting form of enrichment.

The Commission believes it would also be useful to offer an introductory optional program in **infinitesimal calculus**, allowing for a smoother shift from algebra to analysis, which is almost as hazardous as the shift from arithmetic to algebra between elementary and secondary school. Students who go on to take a college diploma in natural sciences and the humanities often have problems with the concept of "mathematical infinity" found in many college programs. This is an epistemological obstacle that could be removed at the secondary level. Such an option, in addition to helping students who go on to college, would also provide a new and invigorating challenge for experienced secondary school teachers.

In science and technology, the Commission believes there is a need to revisit the options in **physics, chemistry** and **biology**, and to offer new options such as **astronomy** and **science and citizenship**. In astronomy, students could explore the universe, a subject that often piques their curiosity, and helps them discover some aspects of an element most would perceive as mysterious. The science and citizenship option could address modern scientific issues such as GMOs and global warming, and link them to citizenship.

Ecology, which used to be offered in Secondary Cycle One but disappeared after the reform, could become an optional subject in Cycle Two, since it is of interest to many students. It would also be relevant to offer a new **computer science** program towards the end of secondary school. This would be an advanced course that would go beyond the integration of ICTs.

Social Sciences

There are many possibilities in this area, because it is so vast. The Commission has presented those it feels are the most relevant, leaving plenty of room for creativity. For example, it would be worthwhile to offer an optional program in **Amerindian history** and another in the **history of immigration to the Americas**. These two programs would be an interesting complement to the History and Citizenship Education program, helping students to understand current social and demographic problems in Québec and in America as a whole.

An option such as **physical geography and geology** would be an interesting complement to the human geography course generally offered, and an optional course in **geography and politics** would help students to understand the close links between territorial boundaries, politics and the ensuing conflicts or alliances. Lastly, the Economics program that is currently compulsory in Secondary V could be restructured and named **economics and the global market**.

This list, while by no means complete, would allow some students to discover new subjects, and others to undertake more in-depth study of subjects already addressed in the compulsory social science programs.

24. Commission des programmes d'études, *Calendar for the Development, Implementation and Revision of Programs of Study*, p. 9.

Arts Education

The **music, drama** and **visual arts** options are very popular with students. **Dance** is offered less frequently, but is of interest to certain students. We feel these programs should be maintained, since they offer students an opportunity to excel. Another interesting optional subject would be **multimedia**, with emphasis on computer graphics, virtual imagery, video, film and photography. Such a course could focus on the artistic and technological media, and it could also help integrate other arts subjects. All arts options could be directed towards personal production, involving subject-specific competencies in several fields of learning and helping students to develop their artistic sensibility and creativity.

Personal Development

In its brief on the Ethics and Religious Culture program, the Commission mentioned that it would be interesting to offer an **introductory philosophy** program in Secondary V. In the Commission's view, a reflective culture needs to be developed in secondary school, and it feels that such a program would contribute to this goal. The program would be based on students' fields of interest, and would help them develop their competencies in critical thinking and analysis. Another, perhaps less significant, benefit of such a program would be to prepare the ground for the students' first philosophy course at the college level. This course can often be a problem, as shown by the Commission d'évaluation de l'enseignement collégial: "The success rates for the first two courses in these subjects (*Philosophie* and Humanities) increased between the fall of 1995 and the fall of 1998. However, one student in every five (20%) had still failed the first course in these two subjects by the end of the observation period."[25]

With regard to physical education and health education, possible optional courses could include action-oriented team sports and individual sports. A program based on field trips involving aspects of physical and health education, geography and history, but focused primarily on physical activity, might also offer an interesting challenge to students wishing to test their own limits, while providing an opportunity to acquire learning in other areas, for example in geology. Similarly, a service program would prepare students to work in emergency or disaster situations, and would be motivating for those wishing to serve the community. In the same vein, a community outreach program would allow students to learn more about themselves, discover their social environment and work for the benefit of the community.

A personal learning project as an optional course

One of the guidelines the Commission has proposed for the design of optional programs concerns an openness to interdisciplinarity. Based on experiments carried out in Québec (personalized plans in the international education program, and the integrative project offered by the École Secondaire Participative de Greenfield Park) and elsewhere, the Commission would look favourably on an arrangement whereby students would select a four-credit personal learning project as an optional course, towards the end of secondary school. The project could be in a subject or a subject area relevant to the student's personal interests, and could take the form of research and analysis or of an original creation.

Personal projects offer integrative benefits at several levels. They encourage students to use their knowledge in context, which in turn motivates them to assimilate it and to deploy other resources in order to develop other competencies. Students could also incorporate their personal learning objectives into the development of the subject-specific and cross-curricular competencies proposed in the curriculum, and thus consolidate and integrate their sometimes fragmented prior learning. Personal learning projects could also help students integrate their understanding of several subjects. They also have the advantage of being adaptable to different learning styles.

25. Commission d'évaluation de l'enseignement collégial, *Évaluation de la mise en œuvre de la composante de formation générale des programmes d'études*, p.49. (free translation)

A personal learning project is likely to revive a student's desire to learn, and this could be useful for students in difficulty. Teachers, too, would appreciate the opportunity to establish a different rapport with their students by taking an interest in their personal projects. We believe it is important for teachers to feel comfortable supervising such projects. Acknowledgment of project supervision duties in the teacher's workload would certainly help rally teacher support for this type of activity. The formula, too, should be flexible. For example, students who opt for a personal project could be grouped together and supervised by a single teacher, or they could be placed within an optional course of their choice.

In short, personal projects carried out within a context of freedom of choice and respect for the interests of students and teaching staff could become an alternative and stimulating way of developing competencies and acquiring learning – in other words, a space within which to practise socio-constructivism. The Commission believes this activity could be a source of motivation and pride for those who choose it.

Career exploration as an option?

One aspect of the "new direction" proposed for Secondary Cycle Two in *Québec Schools on Course* is the diversification of basic learning in general and vocational education. The document states that students will be able to take general education and vocational education courses concurrently, under conditions to be specified in the *Basic school regulation for vocational education*. Vocational education also becomes one of the subject areas in which students will be allowed to select options.

What is the meaning of this statement, and how can optional courses meet the new requirements? These are just some of the questions raised by *Québec Schools on Course*.

Vocational education has long been undervalued socially in Québec, and relatively few students have access to it or make it their first choice. However, it could be an alternative route to a first qualification for numerous students who drop out of school, and for others who enroll in a vocational training centre after a period of time spent in college. In the 1990s, based on these observations, the Ministère de l'Éducation introduced an experimental program in vocational education. The program was divided into five components, each targeting a specific student population and having specific objectives. Success was somewhat mitigated, however, and tended to vary from component to component. Nevertheless, the program did turn the spotlight on vocational education, and the number of enrollments increased over the years.

The Commission des programmes d'études notes that access to vocational education in the under-20 age group was 16.4% in 1999-2000, with 60% of these students already having a secondary school diploma. According to the 2001 education indicators, students who would at one time have opted for the now defunct short vocational program are now found in individualized study plans or in life skills and work skills programs in general education. Given that individualized study plans are likely to be abolished in the reform, these students will in future be placed in ordinary classes in secondary school.

One-third (32.5%) of those enrolled for programs leading to a vocational diploma in 1999-2000 were under 20 years old[28], a figure that has remained fairly constant in recent years, according to the Education Statistics (MEQ, 2001).

While it is true that numerous educational and social factors contribute to the fact that so few students opt for vocational education, even though it would be an interesting path for many of them, the lack of information, understanding and social value also has an impact. Given that the Career Choice Education program was removed from the secondary-level subject-time allocation by the reform, the Commission believes career exploration now has a role to play in informing and guiding students, by introducing them to the trades requiring vocational education and to the professions requiring technical college or university studies.

We can certainly ask ourselves what role has been reserved for vocational education in the Secondary Education Program. The idea of reasserting the value of vocational education and encouraging more students to enroll in vocational programs raises a number of questions, including the following:

- How can the Québec Education Program for secondary schools bring students into contact with the trades they might ultimately choose?
- What type of program would help secondary school students to explore different vocational fields, so that they can discover and become more aware of their aptitudes and personal interests?
- What type of pedagogical structure would allow secondary school students to learn the basics through methods or contents more closely associated with vocational education?

28. Programs leading to the SSVD, SSVC, AVS and CVT.

Answers to these questions can be found in experiments such as the technology option, which offers a technically-oriented general education and is designed to motivate certain at-risk students and improve retention rates. The technology option has been tested in a number of schools since 1990. In 1999-2000 there were 1,177 students enrolled in it in Secondary III, and 518 in Secondary IV. It appears to be meeting its objectives, according to an evaluation by the Centre de développement pédagogique pour la formation générale à caractère technique (1997).

Programs which explore technology through the media also attempt to answer these questions; an example would be the program offered by the Polyvalente Bélanger, of the Commission scolaire de la Beauce-Etchemin. A number of such programs are intended for specific target populations, while others are offered to all students in a given grade.

Career exploration as an activity or option in secondary school, could also answer some of the questions. Not only would it help students become acquainted with trades and occupations, it would also be a gateway to the professions for those wishing to continue their education at college or university. The Groupe de travail sur la relance de la formation professionnelle des jeunes au secondaire et de la formation technique (1995) recommended the creation of a "guidance-oriented school, that is, a school or a series of activities which combine to facilitate educational and vocational guidance and information."[27] The Commission is unsure whether guidance should be built into career exploration activities offered in Secondary IV and V, into periods reserved for the subjects, or into an optional career exploration program prepared by the MEQ.

One of the outcomes of the guidance-oriented school, relating to community involvement through joint action with socio-economic groups, might have a beneficial impact on community revitalization and a way to keep young people in that community. It could, however, restrict the choices of students who are familiar only with their immediate environment. For example, a visit to a vocational training centre run by the school board presents an incomplete view of the distribution of vocational education programs throughout the province. As for programs which explore technology through the media, students can now use ICTs to explore the vocational sector both virtually and in practice.[28]

In any case, the Commission believes that a broad choice of options in the various fields of study could well be an answer to the question of career exploration, thereby allowing students to develop competencies, skills and attitudes that will prepare them for the job market.

* * *

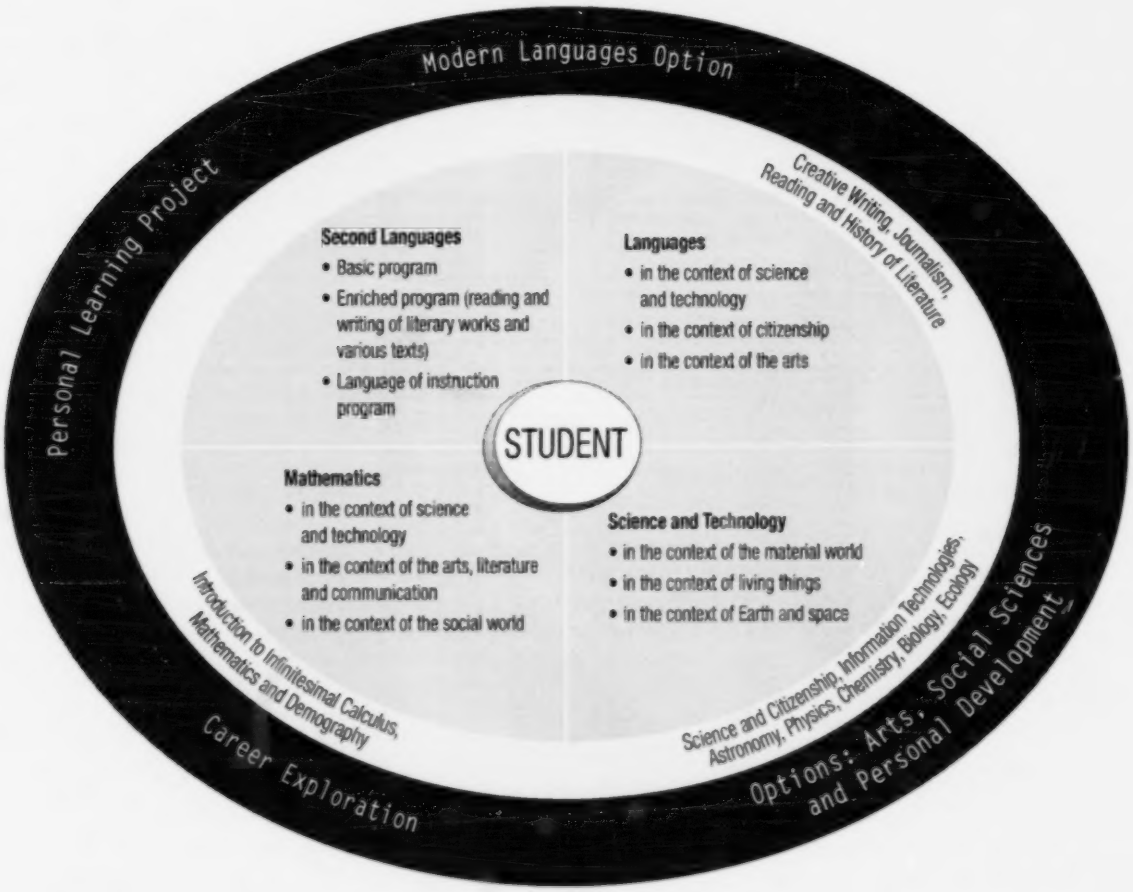
The Commission's proposals, summarized in the following diagram, would bring students face to face with their responsibilities towards educational and vocational choices, as we have mentioned on numerous occasions in this brief. Instead of choosing among predefined learning plans, students would be required to draw up their own plans. A set of programs, comparable in terms of level, would satisfy a range of potentials, aspirations and needs. Students would be able to select the path best suited to their feelings, preferences and future aspirations, without feeling undervalued. For example, a student could opt for differentiated programs in English Language Arts and in mathematics in the context of the arts, for the science and technology program in the context of the material world, the basic program in his or her second language, options in arts education and the personalized learning project. Such a student would have an education equivalent to that of a student who had chosen to take the differentiated programs in languages and in mathematics in the context of the social world, the science and technology program in the context of the living world, an enriched program in his or her second language and options in the the social world, multimedia and third languages.

Individual students, by building their own personal learning plans with an adult providing guidance and advice, could aim either for college or for vocational training. Clearly, occasional backtracking would be permitted. For example, the choice of one differentiated program may direct the student towards other differentiated programs and optional programs in particular. Similarly, exploration through options may lead students to reconsider their choice of a particular differentiated program. If they change their minds, the same *essential knowledge* mentioned earlier should prevent them from being penalized.

27. Groupe de travail sur la relance de la formation professionnelle des jeunes au secondaire et de la formation technique, *La formation professionnelle chez les jeunes, Un défi à relever*, p. 44. (free translation)

28. Two data banks (REPÈRES and AREF) on training institutions and programs, and on the labour market and the professions, can be accessed by computer in all secondary schools. The banks are managed by GRICS in cooperation with the MEQ.

Example of Differentiated Programs and Optional Programs for Diversified Educational Paths


Modern Languages Option
Personal Learning Project
Creative Writing, Journalism, Reading and History of Literature
Second Languages
• Basic program
• Enriched program (reading and writing of literary works and various texts)
• Language of instruction program
Languages
• in the context of science and technology
• in the context of citizenship
• in the context of the arts
STUDENT
Mathematics
• in the context of science and technology
• in the context of the arts, literature and communication
• in the context of the social world
Science and Technology
• in the context of the material world
• in the context of living things
• in the context of Earth and space
Introduction to Infinitesimal Calculus, Mathematics and Demography
Science and Citizenship, Information Technologies, Astronomy, Physics, Chemistry, Biology, Ecology
Career Exploration
Options: Arts, Social Sciences and Personal Development

Differentiated programs

Optional programs in compulsory subjects

Other options

3.3 Concerning recognition of competencies

Rethinking the question of certification

An opinion on differentiated programs and optional programs in secondary schools must necessarily consider the issue of certification. Differentiation as proposed by the Commission is an excellent way of promoting success for all students, by taking into account their personal interests and potential. Certification officially acknowledges success, and is the final outcome of the secondary school evaluation process. In aiming for a high quality educational program focused on student success, it is natural that the Commission should address the issue of certification.

The Commission is aware of the plans for secondary level certification presented at the MEQ-ADIGECS meeting.[29] However, it is not familiar with some significant aspects of this project, such as the "learning evaluation policy" and the "reference framework," and is therefore unable to form a definitive opinion.

Nevertheless, the Commission would like to draw attention to the fact that it is important to avoid creating a hierarchy of subjects by failing to acknowledge the value of some subjects for certification purposes. Following on from its proposals for differentiation and its proposals concerning the role of options in the education process, the Commission believes certification should be a reflection of differentiation, giving students and teachers a sign that every component of the program, whether optional or compulsory, is significant and of value.

Similarly, the Commission believes that certification and the question of prerequisites should be discussed with representatives of the college community, so that future changes which take diversification into account will not penalize students who wish to go on to college.

The transition to college

The Commission feels that further reflection is required to coordinate with the colleges, primarily because of the standpoint it has adopted in this brief. Given that its proposals for differentiated and optional programs may sometimes impact both levels of instruction, a certain amount of flexibility is needed in the structure of prerequisites.

The Commission acknowledges that its proposal poses a considerable challenge in this respect. It believes the Secondary School Diploma should give access to as many college programs as possible, and that prerequisites should be kept to a minimum. For example, a student who wishes to enroll in the pre-university Science program, or in certain technical programs, should not be prevented from taking the differentiated program of his or her choice, or be deprived of the opportunity to explore new options that could broaden his or her horizons. The current science and mathematics prerequisites are more often used as selection criteria than valued in themselves. If certain courses are essential for acceptance into college programs, the Commission feels they should be built into these programs; otherwise, secondary schools would simply be the servants of the colleges. For example, students who do not have the necessary prerequisites could take the required courses as part of their college program, while those who do have them could take more advanced courses in their college subject.

Representatives of the secondary and college systems will have to negotiate in order to solve these issues. The negotiations should be approached from a new standpoint, with a view to reducing the number of prerequisites to a minimum, since secondary schools have more to do than simply prepare students for college.

29. Document 3, *Une sanction d'études secondaires renouvelée*, point 3.5, presented at the meeting of January 28, 2002.

Chapter 4

Conditions of Implementation

Secondary schools are engaged in a process of change resulting from several factors. The first of these is the extension of the competency-based approach to the secondary school curriculum, along with the accompanying constructivist epistemology and related educational approaches. At the same time, elementary school students who have taken the new programs are now moving on to secondary school. These changes will force the secondary school community to adopt a new vision of education and devise a new relationship with learning. The new Québec Education Program is a reference tool for the planning of instruction, and should leave teachers with the flexibility they need to act as professionals, in line with the current shift towards professionalization. We should make use of this professionalism, especially since new elements will be introduced into the current subject-time allocation and into the programs of study in this second cycle. At the same time, schools will receive new powers, as part of the decentralization process. Secondary schools will therefore be called upon to change in order to foster success for their students.[30]

The Commission notes that some schools have already begun to face the challenge by adopting an open attitude to the reform and introducing reflective practice, as shown by the large number of projects proposed at the secondary level, described in *Vie pédagogique* (no. 121, 2001). These projects have resulted in the rethinking of plans or in innovative actions that have produced encouraging, and sometimes profitable, results in terms of student success. In these cases, the secondary Québec Education Program will fall on fertile ground. Elsewhere, schools will have to work hard and encourage everyone concerned to work towards the goal of success for all students.

30. In its 1994-1995 annual report on the state of education and educational needs, the Conseil supérieur de l'éducation addressed the notion of change in education by inviting all stakeholders in the system to help create a "culture of change."

4.1 Changes requiring a commitment

Secondary schools, whether they are already working towards the reform or still applying traditional practices, will need to take specific action in the second cycle. The introduction of differentiated programs and optional programs, as proposed by the Commission, will have an impact on the professional competencies of both the teaching staff and school administrators, and on the organization of teaching — not to mention on the parents. In other words, educational differentiation will not automatically be reinforced by the introduction of program differentiation. On the contrary, a number of conditions apply.

For the teaching staff

The Commission is aware that its proposals change the perception of programs of study in some compulsory subjects. The proposed differentiated programs will require a new approach to the subjects in question, which involves relating them to other subjects or applying them in unusual contexts, and this constitutes a considerable challenge for specialists who have been used to other methods. Student groups must be formed on the basis of new criteria, and schedules must become more flexible so that time becomes subordinate to learning, especially for the personal learning project and the choice of options.

Pedagogical supervision aimed at helping students to develop the same competencies in a variety of contexts, where the *essential knowledge* may be somewhat different, requires a great deal of cooperation and coordination on the part of the cycle team or the teachers responsible for the cycle of a given year. They will have to use their personal strengths, and place students in situations within which they can progress in their learning, at their own pace. It will be quite a challenge! Not to mention evaluation, which takes on new meaning with the introduction of the notion of competency.

Professionally speaking, the type of differentiation proposed here is demanding for teachers, whose competencies and professional qualifications will need to be updated through further training. We need only think of the introduction of cultural elements into second language and modern language instruction, or the introduction of artistic elements into mathematics instruction. All teachers will need to undergo professional development to cope with differentiation, and in some cases they will have to be retrained. Students will need to change how they learn, as will teachers, whose new task will involve going beyond their traditional conceptions of learning. As Perrenoud (1997) has pointed out, they will have to change not only their relationship with learning, but also their classroom practices, since their job will be to encourage learning rather than to teach. To achieve these behavioural changes, teachers will need to adopt a more reflective approach to the integration of new practices.

For example, teachers will not know the outcome of personal learning projects in advance. Their role therefore changes from that of a teacher in the traditional sense to that of a guide who no longer has full control over a predefined process, and this may be destabilizing for people whose role formerly consisted in dispensing subject-specific knowledge. They will need to position themselves "alongside" their students, rather than "in front" of them. Their task will be to take an interest in the students' projects and guide them through their research. The question remains as to whether this new order will change the teacher-student relationship. It will all depend on the type of interactions. At the same time, as they gain experience, teachers will need to leave aside traditional teaching materials in favour of a range of authentic material and reference documents.

Personal projects will also benefit from cooperation between teachers in different disciplines, and this means being open to other approaches and other points of view, drawing on each person's strengths. The Commission believes this type of cooperative approach will be a challenge for secondary schools, where the atmosphere is not conducive because of time constraints and the general culture. Time will have to be made available, however. Ultimately, the new context will change the relationship with learning that has tended to predominate in schools. Teachers therefore need to be prepared, so that they can adjust their approach to create a space within which students are able to exercise their responsibilities, and where essential knowledge from the specific subjects can be combined and enriched.

In some cases, the effectiveness of teachers and teaching teams derives from how they use the available resources to meet their students' needs. Sometimes, they will need to combine resources from the school and from the community. The new professional approach of teachers is therefore based on a definition of the school as an educational community. The Conseil supérieur de l'éducation (1998) has pointed out in a brief on the educational community, that such schools involve all their players, both internally and in the adjacent community, and rely on sharing and on high quality interactions to carry out their educational mission. Are teachers prepared for a more open internal and external school environment – in other words, for schools that are open spatially, socially and educationally?[31]

Basic teacher training will have to adjust to these new realities, since the quality of learning and the success of the reform and its new elements depend to a large extent on the quality of the teaching staff, both individually and collectively. Basic teacher training, like continuing education, must be consistent with the spirit of the Québec Education Program and its foundations.

31. These three forms of openness are mentioned by Chalier and Saint-Jacques.

For school administrators

School administrators have an important leadership role to play, in both the organizational aspects of teaching and in the provision of professional development for teachers. It is the school administration that has official authority to manage the school, organize activities and supervise the staff and students, and that is ultimately responsible for the results obtained.[32]

With the new powers granted to schools, administrators are also responsible for applying program-related decisions made by the governing board. For example, they must make sure the school offers as broad a range of differentiated and optional programs as possible, to reflect the interests of the student body. It is up to the school administrators to create conditions conducive to the introduction of differentiated and optional programs. At the same time, they may have to establish cooperative ties, for example by implementing local and regional projects, or projects involving partners outside the province. It will be up to school administrators to provide more flexible school organization, adjust timetables and make periods available for personal learning projects.

School administrators must also exercise educational leadership, by relying on and encouraging the professionalism of their teachers. They must also facilitate cooperation between the teaching team and the school team, to help students define their personal learning plans.

The school boards, too, have a role to play in the differentiation process in Secondary Cycle Two, for example, by mobilizing human, material and financial resources and educational services. However, as the Conseil supérieur de l'éducation (1999c) has pointed out, "it is up to the Ministère de l'Éducation to establish standards for funding and rules for labour relations that will allow secondary schools to take back control over school organization."[33]

For parents

Parents are involved in a number of ways in the reform, and have a role to play in the diversification of Secondary Cycle Two, in particular with regard to the proposed new differentiated programs. The new approach, which places learning in context and requires a certain amount of guidance, will be popular with some parents, but will go against the beliefs of others. How will parents regard a form of differentiation that is based on students' interests, as opposed to increased content, according to the usual model? How will they regard equal value interdisciplinary programs? These are major changes, and there is much to be gained by informing parents of the underlying reasons and the issues involved, thereby obtaining their support. Parents will only cooperate with the school and support their children if they understand the goals of the new programs, and of the Québec Education Program in general. The Commission is sensitive to this reality, and wishes to draw the Minister's attention to it.

4.2 Changes in the organization of teaching

Changes due to time management

The Commission wishes to emphasize the general importance of time management for the reform of the secondary school curriculum, and notes that much has already been written on the subject. Time is a factor for both the differentiated programs proposed by the reform and for optional programs. Time management is also a significant part of the organization of teaching. The different contexts used to develop competencies will often require different learning times, and careful management will be required to ensure that this does not run counter to the provisions of the *Basic school regulation*. Similarly, some of the activities offered in optional programs require additional time, and involve an additional workload for teachers. While it is important for schools to control the time element, it is also important for them to reorganize teachers' tasks to ensure meaningful learning for the students.

Thus, "learning time becomes a vital element of meaningful learning, and teaching time becomes a pedagogical condition for the implementation and support of that learning."[34] The Commission wholeheartedly agrees with this statement. It will therefore be necessary to review the management of teaching time, of time for cooperation (as mentioned earlier) and of learning time, all of which play a part in determining the overall time management of the school.

32. Norman Henchey, *Schools That Make a Difference: Twelve Canadian Secondary Schools in Low-Income Settings*.

33. Conseil supérieur de l'éducation, *Diriger une école secondaire: un nouveau contexte, de nouveaux défis*, p. 56. (free translation)

34. Conseil supérieur de l'éducation, *Aménager le temps autrement. Une responsabilité de l'école secondaire*, Brief submitted to the Minister of Education, p. 19. (free translation)

Changes due to ICTs

"New information and communications technologies automatically lead to new models or new paradigms based on new student/knowledge/teacher relationships."[35] In other words, technology triggers and proposes a pedagogical restructuring process that will inevitably cause disruption. In a brief on the subject, the Conseil supérieur de l'éducation (2000) states that the use of technology should contribute to the introduction of a more constructivist pedagogy. Students' participation in activities involving technology should encourage collaborative work and more complex projects. ICTs should have an impact on students' motivation and on their relationship with knowledge, and also help them develop certain intellectual skills, such as critical judgment, problem-solving abilities and effective work methods.

For teachers, ICT use would promote research and teamwork, and would encourage the organization of learning activities consistent with a pedagogical project. The type of relationship maintained by teachers with students would also be likely to change, with the teacher's role shifting from that of knowledge provider to that of learning facilitator. These changes in teaching and learning, combined with the new roles of students and teachers, would be consistent with socio-constructivist thinking, which recommends teaching and learning strategies that enable students to become more active in building their own knowledge.

The Commission notes that a number of limitations may emerge with the introduction of differentiated and optional programs that break down curriculum barriers and extend the range of choices. Examples would include the size of the school and its distance from a major city. Smaller schools are more likely to offer a "compulsory" set of optional subjects than larger schools. In some cases, students select a school and take the options available there without having access to a choice that would allow them to try out and discover new subject areas.

In the past, distance education has been of tremendous help to people who are unable to take advantage of the services offered by the traditional education system. In the present context, ICTs could similarly serve the cause of smaller schools. As the Conseil supérieur de l'éducation points out, telelearning (on-line learning or networked learning) could well become an additional service to the schools.

> In some schools with insufficient enrollment or budgets, especially at the secondary level and in regions where distances are significant and populations are small, telelearning could be used to enrich the basic curriculum with options appropriate to the needs and interests of some students.[36]

Experiments and projects are currently underway in schools that have formed networks to offer differentiated programs or optional programs that they could not otherwise have provided due to their falling enrollments or remote location. An example in the English-speaking sector is the Distance Education and Community Network (DECN) created by the Central Québec, Eastern Shores and Western Québec school boards, in cooperation with the MEQ's Services à la communauté anglophone.[37] In the French-speaking sector, an example would be the Physical Science remedial program 416 (RTSP416) offered by the Commission scolaire de la Beauce-Etchemin (2001), which shows the potential of and interest in telematic teaching.[38] The Commission des programmes d'études believes that distance learning could be a possible solution, worthy of further exploration, to problems such as small student numbers, lack of qualified staff, training requirements and remedial work.

* * *

As we have seen, the introduction of the differentiated programs and optional programs proposed by the Commission des programmes d'études would affect many aspects of school life and school practice. Secondary schools, with the support of parents, school boards and the MEQ, would have to adjust to all these changes – a challenge both stimulating and worthwhile.

35. Philippe Marton, *Les technologies de l'information et de la communication et leur avenir en éducation*, p. 1. (free translation)

36. Conseil supérieur de l'éducation, *Éducation et nouvelles technologies, pour une intégration réussie dans l'enseignement et l'apprentissage*, p. 58. (free translation)

37. This project addresses three of the problems encountered by schools in remote areas, namely a small number of students spread over a large area, a lack of qualified staff to teach certain subjects, and a need for professional development. Source: Margaret Dupuis, D.E.C.N., *Distance Education and Community Network. Annual Report 2000-2001*, September 28, 2001.

38. Telematic teaching enabled 26 students to repeat the course during the summer, using the model of programs that explore technology through the media. The course was a success and 76% of students passed.

Conclusion

In this brief, the Commission des programmes d'études takes the initiative of proposing a nontraditional way of offering differentiated programs and optional programs in Secondary Cycle Two. Its goal in doing so is to play a role in the significant and demanding task of building programs that are sufficiently stimulating to retain student interest and yet that reflect differences in student motivation, potential, choices and pace of learning. Although secondary schools have been very successful in recent years, performing well in international comparisons of reading, mathematics and science achievement, they have lost many students on the way, and students' interest in education has tended to decline as they have progressed through the school. The emphasis on performance, to the point of reducing motivation and fostering exclusion, has likely been a contributing factor.

These observations have served as the point of departure for this brief. It suggests directions for action, and the Commission invites the Ministère de l'Éducation and the school community to reflect further on the issues which are addressed.

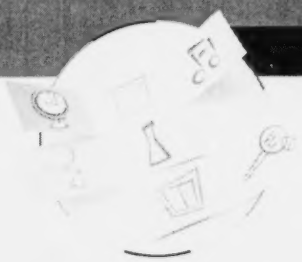
The Commission believes competency-based programs are conducive to pedagogical differentiation, but also feels this should be reinforced by further differentiation of the contexts for learning in Secondary Cycle Two. Based on this principle, the Commission proposes the creation of differentiated programs in language of instruction, mathematics and science and technology, following a somewhat different approach from that proposed in *Québec Schools on Course*. It bases its position, first, on the disadvantages of differentiation by content enrichment and consequent increases in the number of credits taken from the optional subjects, and second, on experiments already carried out in certain schools. The Commission proposes a form of differentiation based on student interest, applicable to all the above programs except second language instruction.

Unlike previous cycles, Secondary Cycle Two gives a greater place to academic and career counselling. Thus, differentiated and optional programs should not only provide basic education, but should also allow students to explore and engage in further study of certain subjects within school learning profiles that they themselves construct. When differentiated programs are drawn up, it will be important to provide a way for students to transfer from one to another without penalty, since they are still in basic education. The Commission also proposes optional programs that would allow students either to study a subject in more depth, or to explore new subjects. The new approach would, of course, require a review of certification procedures.

The Commission concludes its brief with an overview of the changes triggered by this new vision of Cycle Two programs – changes for teachers, school administrators, parents, and implicitly, for students, especially in terms of personal accountability. The changes in question would be part of the systemic reform of education that would alter teaching methods by allowing students to play a more active role in their own learning. Secondary schools will not be able to ignore change if they want to keep up with current social and technological developments. The Commission's proposal will require adjustments to the structure of teaching time, an important element that involves coordination and reorganization of the subject-time allocation. New information and communications technologies also demand a certain adjustment and the question becomes how schools can use them to best effect, for both teachers and students. Given that most students are open to new technology, often more so than their teachers, how can schools make better use of the gateway to the world offered by computers, and the vast quantity of information to which they provide access? This is a new challenge for secondary schools, and one they cannot avoid if they want to retain their students and prepare them to live in the society of tomorrow.

In this brief, the Commission des programmes d'études offers a response to the new challenges raised by differentiation in Secondary Cycle Two. It is aware that there is still much that has not been said on the subject, and that the process of reflection must continue with a view to defining parameters and identifying ways in which its proposals might be implemented. At the same time, it is convinced that the type of differentiation it has proposed for Secondary Cycle Two will be a source of motivation and interest, helping ensure that every student achieves academic success, and every teacher achieves greater professional satisfaction.

Appendix 1



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Appendix 2

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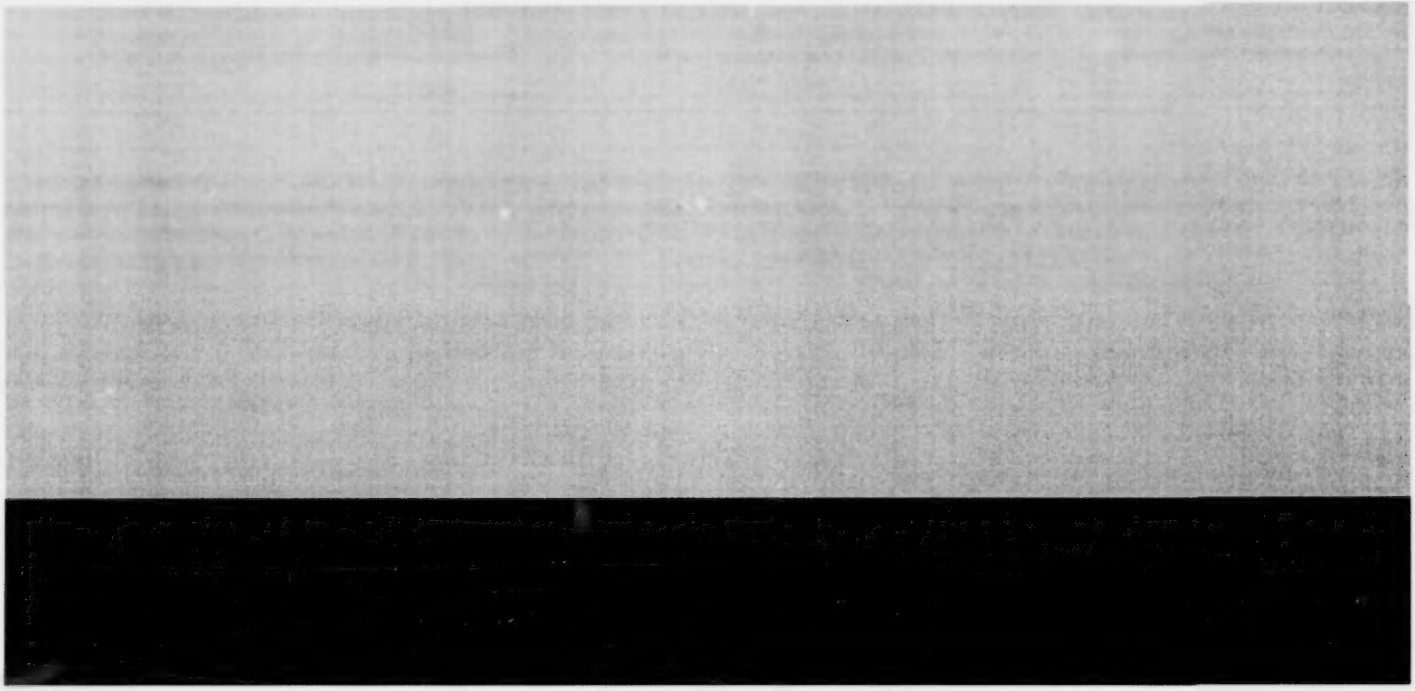

Why do students in Québec say they do not enjoy mathematics and science, even though they rank among the best in the world in OECD tests? What can be done to give students an opportunity to explore and test their preferences and aptitudes, while providing them with a good basic education and allowing them to acquire a shared cultural background? In a world where continuing education has become a fact of life, how can students be encouraged to remain in school, and what can be done to guide them towards general or vocational education? Moreover, how can programs of study be differentiated so that they meet the needs of students in the 21st century?

These are just some of the questions addressed by the Commission des programmes d'études in this brief. The Commission hopes its observations will stimulate further thinking and concrete actions to ensure educational success for every student in Québec.

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